EP 2 787 630 A1

FIG. 1A

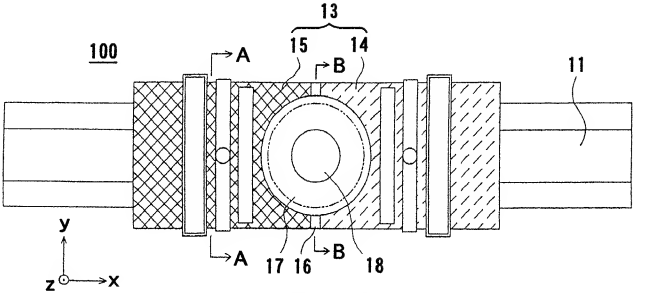

FIG. 1B

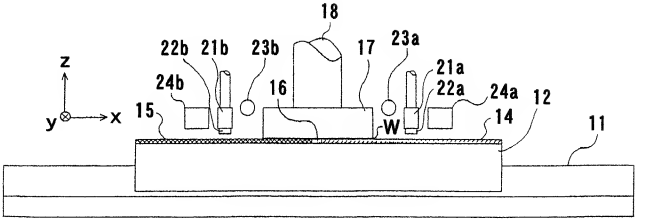

FIG. 2

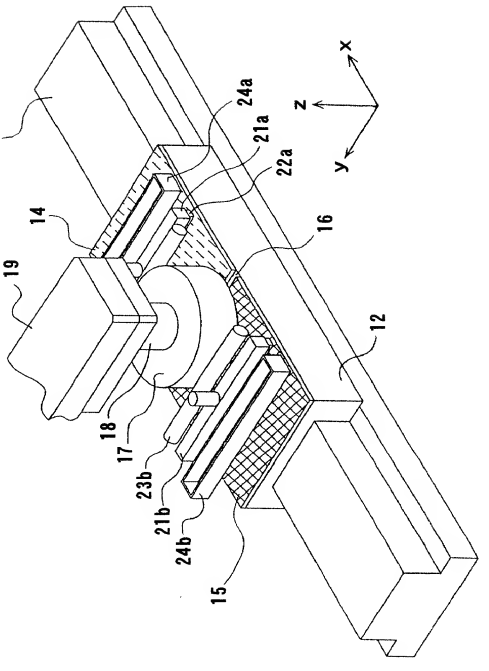

FIG. 3A

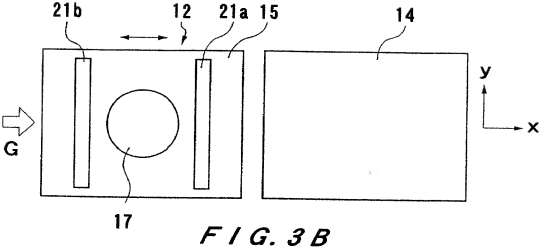

FIG. 3B

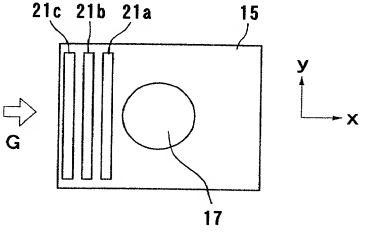

FIG. 3C

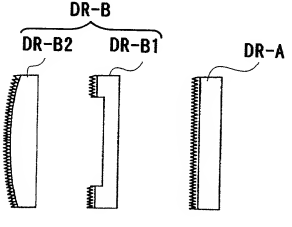

FIG. 4

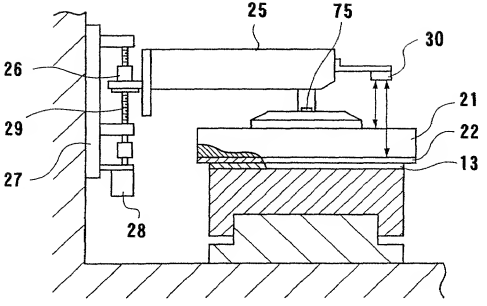

FIG. 5

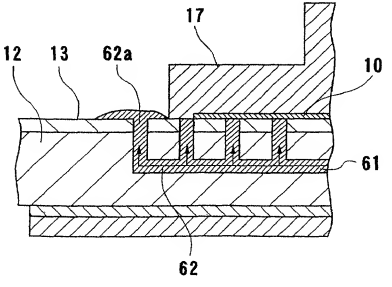

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FIG. 6A

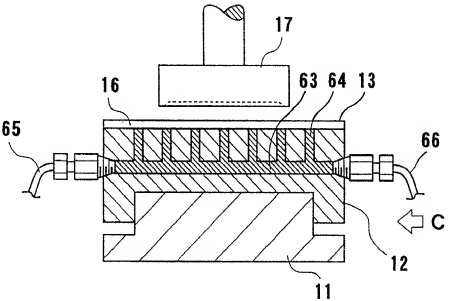

FIG. 6B

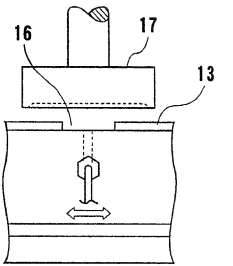

FIG. 7

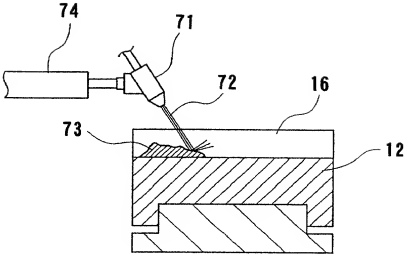

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FIG. 8A

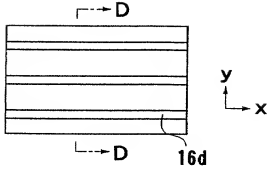


FIG. 8B

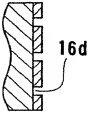


FIG. 9A

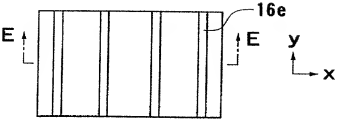


FIG. 9B

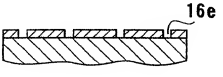


FIG. 9C

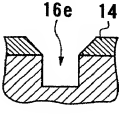


FIG. 10A

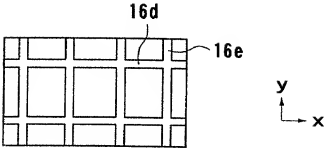


FIG. 10B

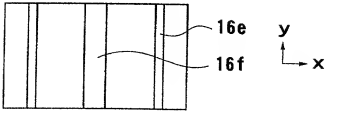


FIG. 10C

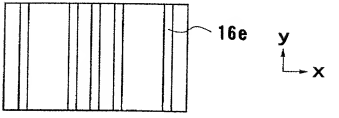


FIG. 11A

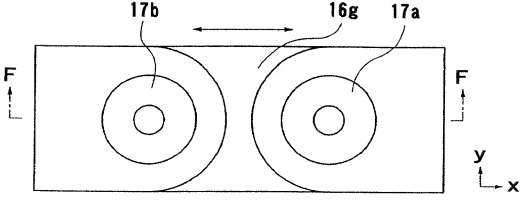


FIG. 11B

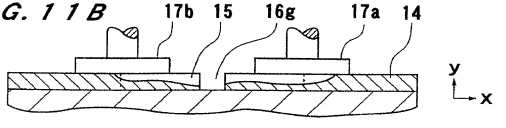
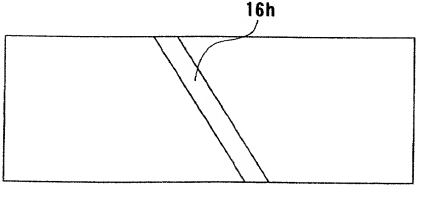


FIG. 11C



FOREIGN PATENT DOCUMENT

FIG. 12

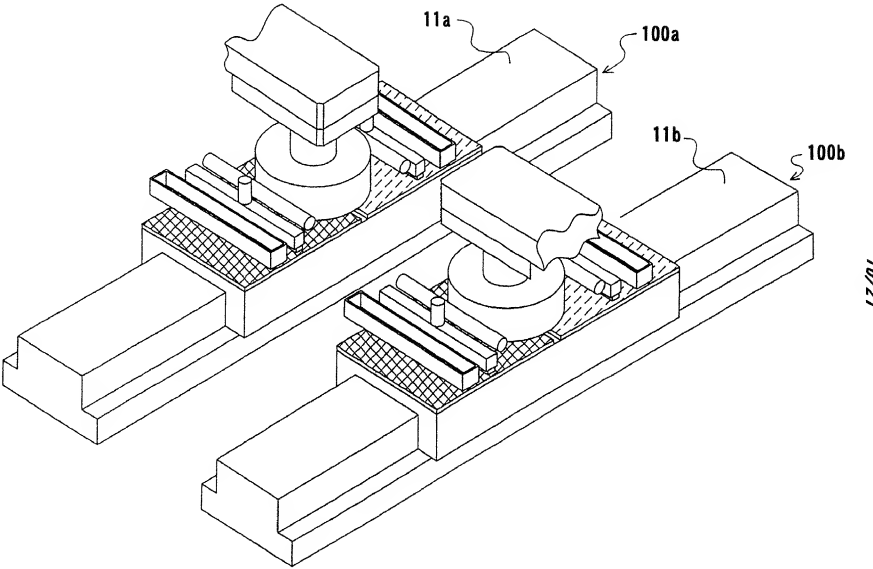


FIG. 13

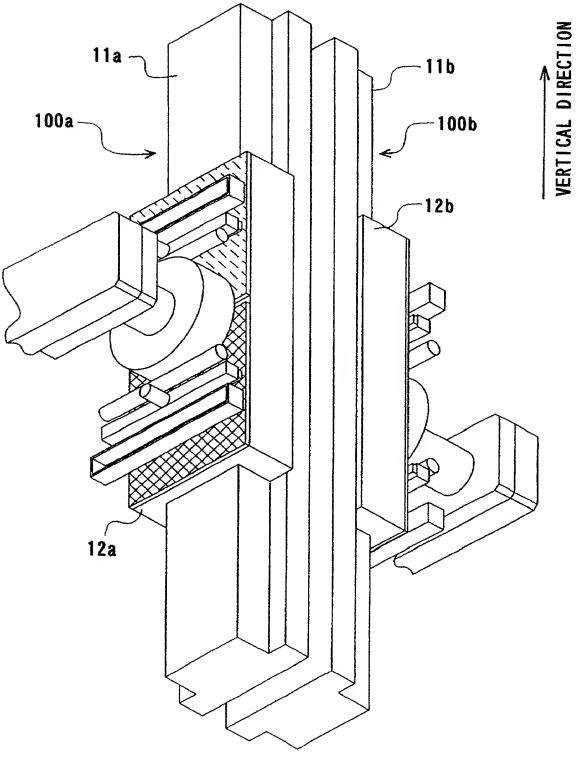


FIG. 14

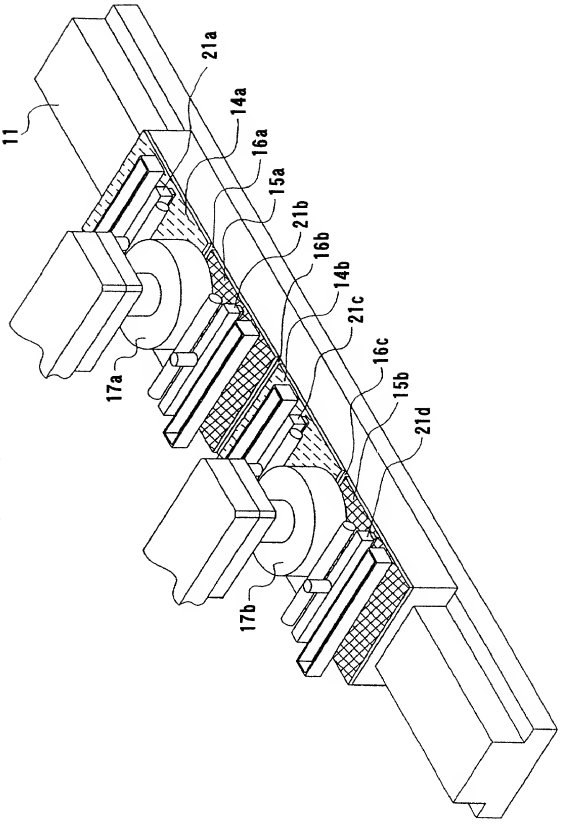


FIG. 15

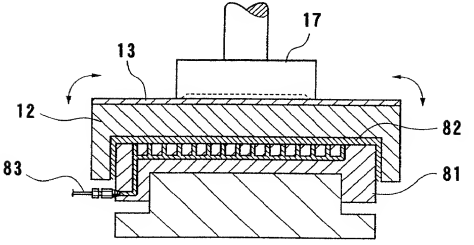
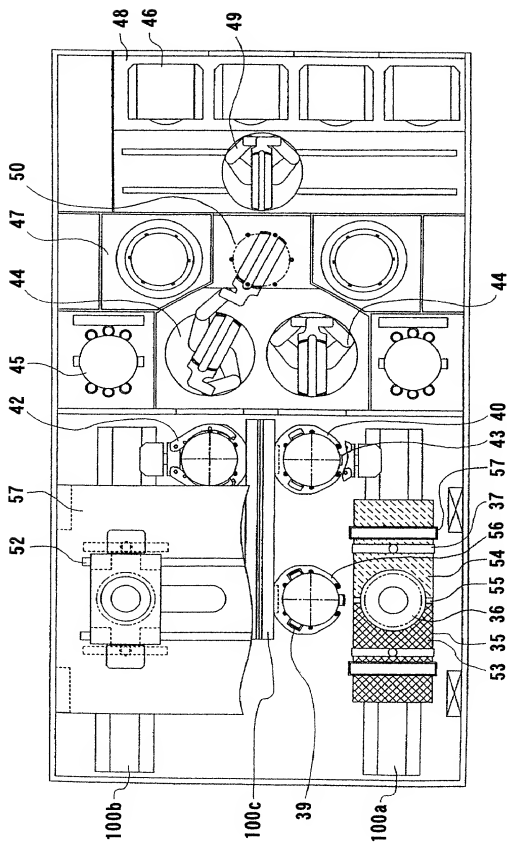


FIG. 16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100b
100c
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100a

FIG. 17

GENERAL CHARACTERISTICS OF LINEAR MOTORS

	LIM	LDM	LPM
CONTINUOUS OPERATION	◎	△	○
INTERMITTENT OPERATION	○	◎	◎
SMALL-DISPLACEMENT RECIPROCAL MOVEMENT	△	◎	◎
LARGE-DISPLACEMENT RECIPROCAL MOVEMENT	◎	△	○
POSITIONING PERFORMANCE	○	◎	◎
LARGER PROPULSION	◎	○	○
LOW-SPEED OPERATION	◎	○	◎
HIGH-SPEED OPERATION	◎	○	△
OPEN-LOOP CONTROLLABILITY	○	×	◎
VERTICAL DELIVERY	○	△	○
SIMPLER CARRIAGE STRUCTURE	◎	△	○
SIMPLER CONTROL POWER SUPPLY	○	◎	○
PRICE	○	△	△
ADAPTABILITY	LARGE-OUTPUT, CONTINUOUS TRANSPORT MEDIUM AND HIGH-SPEED TRANSPORT	SMALL-DISPLACEMENT, HIGH-SPEED POSITIONAL CONTROL	LOW-SPEED, HIGH-PROPULSION TRANSPORT INTERMITTENT TRANSPORT POSITIONAL CONTROL

◎ : EXCELLENT ○ : GOOD △ : PROBLEMATIC × : DIFFICULT

LIM : INDUCTION MOTOR

LDM : DC MOTOR

LMP : PULSE MOTOR

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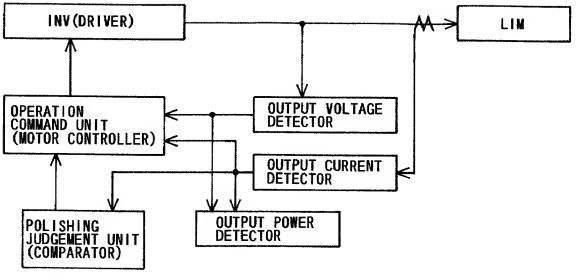
FIG. 18



CONSTANT OUTPUT FREQUENCY CONDITION

	CONSTANT OUTPUT VOLTAGE		VARIABLE OUTPUT VOLTAGE (HIGH EFFICIENCY)	
	LIGHT LOAD	HEAVY LOAD	LIGHT LOAD	HEAVY LOAD
VOLTAGE			SMALL	LARGE
CURRENT	SMALL	LARGE	SMALL	LARGE
POWER	SMALL	LARGE	SMALL	LARGE
POWER FACTOR	△	○	○	○

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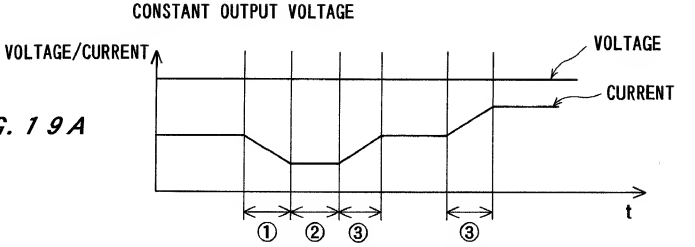
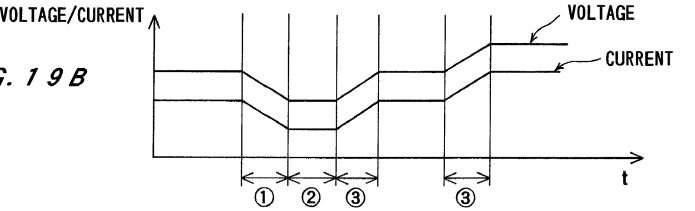
FIG. 19A



①:REDUCING LOAD ②:LIGHT LOAD ③:INCREASING LOAD

FIG. 19B



①:REDUCING LOAD ②:LIGHT LOAD ③:INCREASING LOAD

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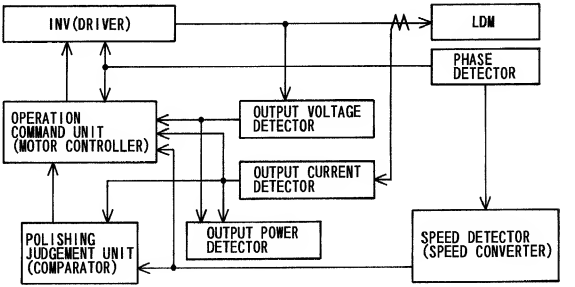
FIG. 20



CONSTANT SPEED CONDITION
CONSTANT OUTPUT VOLTAGE

	LIGHT LOAD	HEAVY LOAD
VOLTAGE		
CURRENT	SMALL	LARGE
POWER	SMALL	LARGE
POWER FACTOR	△	○

VARIABLE SPEED CONDITION
CONSTANT OUTPUT CURRENT

	LIGHT LOAD	HEAVY LOAD
SPEED	HIGH	LOW

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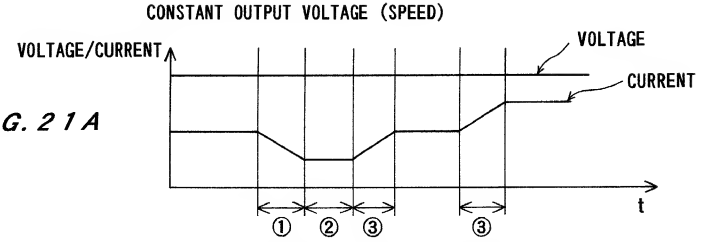
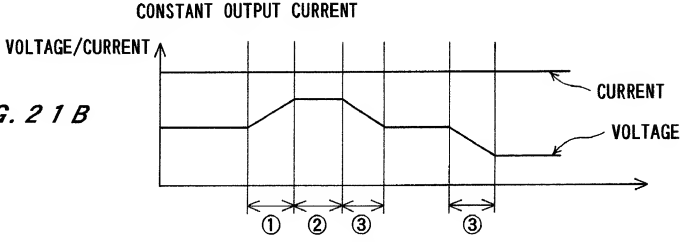
FIG. 21A



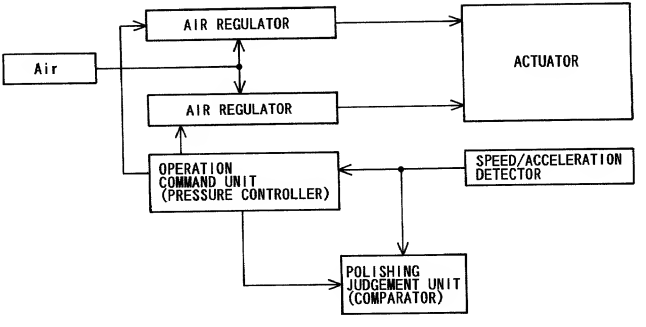
①:REDUCING LOAD ②:LIGHT LOAD ③:INCREASING LOAD

FIG. 21B



①:REDUCING LOAD ②:LIGHT LOAD ③:INCREASING LOAD

FIG. 22


AIR REGULATOR
Air
AIR REGULATOR
ACTUATOR
OPERATION
COMMAND UNIT
(PRESSURE CONTROLLER)
SPEED/ACCELERATION
DETECTOR
POLISHING
JUDGEMENT UNIT
(COMPARATOR)

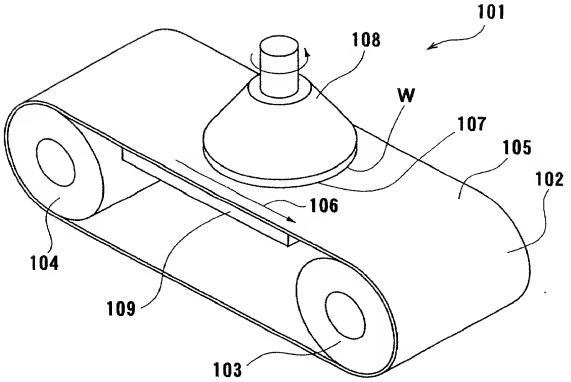



FIG. 23